

Policy & Procedure (P&P)

Policy Title :

Functional Calibration of Centrifuge for Platelet Separation

Department	Index No.	Scope
Laboratory & Blood Bank	LAB-110	Blood Bank Staff
Issue Date	Revision NO	Effective Date
20/06/1432	2	23/07/1440
Review Due Date	Related Standard NO.	Page Number#
23/07/1442	CBAHI (LB .43)	3

01. Policy:

- 01.1. Successful preparation of platelet concentrates requires adequate but not excessive centrifugation. Each centrifuge used to prepare platelets should be calibrated upon receipt and after adjustment or repair.

02. Definition:

- 02.1. N/A

03. Purpose :

- 03.1. Appropriate calibration of centrifuge gives adequate yield of platelets.

04. Procedure :

04.1. Material:

- 04.1.1. Freshly collected whole blood, obtained by phlebotomy into a bag with two integrally attached transfer containers.
- 04.1.2. A specimen of blood from the donor, anticoagulated with EDTA and collected in addition to the specimens drawn for routine processing.
- 04.1.3. Metal clips and hand sealer or dielectric sealer.
- 04.1.4. Clean instruments (scissors, hemostats, tubing stripper).
- 04.1.5. Plasma extractor.
- 04.1.6. Centrifuge suitable for preparation of platelet concentrates.
- 04.1.7. Worksheet for recording results.

04.2. Preparation of Platelet-Rich Plasma:

- 04.2.1. Perform a platelet count on the anticoagulated specimen. If the platelet count is below 133,000/ μ L, do not use this donor's blood for calibration.
- 04.2.2. Calculate and record the number of platelets in the Whole Blood unit: $\text{platelets}/\mu\text{L} \times 1000 \times \text{mL of whole blood} = \text{number of platelets in whole blood}$.
- 04.2.3. Prepare PRP at a selected speed and time.
- 04.2.4. Place a temporary clamp on the tubing so that one satellite bag is closed off. Express the PRP into the other satellite bag. Seal the tubing close to the primary bag, leaving a long section of tubing, the "tail". Disconnect the two satellite bags from the primary bag. Do not remove the temporary clamp between the satellite bags until the platelets are prepared.
- 04.2.5. Strip the tubing and "tail" several times so that they contain a representative sample of PRP.
- 04.2.6. Seal off a segment of the "tail" and disconnect it, so that the bag of PRP remains sterile.
- 04.2.7. Perform a platelet count on the sample of PRP in the sealed segment. Calculate and record the number of platelets in the bag of PRP: $\text{platelets}/\mu\text{L} \times 1000 \times \text{mL of PRP} = \text{number of platelets in PRP}$.
- 04.2.8. Calculate and record percent yield: $(\text{number of platelets in PRP} \times 100) \text{ divided by } (\text{number of platelets in whole blood})$.
- 04.2.9. Repeat the above process three or four times with different donors, using different speeds and times of centrifugation, and compare the yields achieved under each set of test conditions.
- 04.2.10. Select the shortest time/lowest speed combination that results in the highest percent of platelet yield without unacceptable levels of red cell content in the PRP.
- 04.2.11. Record the centrifuge identification, the calibration settings selected, the date, and the identity of the person performing the calibration.

04.3. Preparation of Platelets:

- 04.3.1. Centrifuge the PRP (that prepared above) at a selected time and speed to prepare platelets.
- 04.3.2. Remove the temporary clamp between the two satellite bags and express the platelet-reduced plasma into the second attached satellite bag, leaving approximately 55 to 60 mL volume in the platelet bag. Seal the tubing, leaving a long section of tubing attached to the platelet bag.
- 04.3.3. Allow the platelets to rest for approximately 1 hour.
- 04.3.4. Place the platelets on an agitator for at least 1 hour.
- 04.3.5. Strip the tubing several times, mixing tubing contents well with the contents of the platelet bag. Seal off a segment of the tubing and disconnect it, so that the platelet bag remains sterile.
- 04.3.6. Perform a platelet count on the contents of the segment.
- 04.3.7. Calculate and record the number of platelets in the concentrate: $\text{platelets}/\mu\text{L} \times 1000 \times \text{mL of}$

platelets = number of platelets in platelet concentrate.

- 04.3.8. Calculate and record percent yield.
- 04.3.9. Repeat the above process with PRP from different donors, using different speeds and times of centrifugation, and compare the yields achieved under each set of test conditions.
- 04.3.10. Select the shortest time/lowest speed combination that results in the highest percent of platelet yield in the platelet concentrate.
- 04.3.11. Record the centrifuge identification, the calibration settings selected, the date, and the identity of the person performing the calibration.

06. RESPONSIBILITY

- 06.1. All Blood Bank Staff of Al-Qunfudah General Hospital.

07. EQUIPMENT AND FORMS::

- 07.1. Plasma Thawing Machine Temperature.

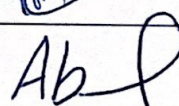
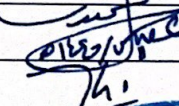
08. Attachment :

- 08.1. N/A

09. Reference

- 09.1. Technical Manual of the American Association of Blood Banks.

Preparation , Reviewing & Approval Box

	NAME	POSITION	SIGN & STAMP	DATE
Prepared By	Dr RAJA NACER SASSI	Head of Blood Bank		
Reviewed By	Mr. ABDULHADI ASHIRI	Lab & B.Bank HOD		
Document Reviewed By	Ms. SADIAH ALMAHMOUDI	TQM Director		17/5/20
Reviewed By	Dr. AGEEL ALGANIMI	Medical Director		
Approved By	Dr. ABDULLAH ALJABRI	Hospital Director		9/14/14

